

**REMARKS**

Reconsideration of this application is respectfully requested in light of the above amendments and following remarks. Claims 1 – 7, 9 – 19 and 21 - 27 remain in the application; Claims 8 and 20 have been canceled.

I. Regarding the rejection of 8 and 20 under 35 U.S.C 112, second paragraph, Applicant has canceled claims 8 and 20 rendering this rejection moot.

II. Regarding the rejection claims 1 – 27 under 35 U.S.C. 103(a) as being unpatentable over Peters (US '259) in view of Liang et al. (US 6,492,883), Applicant has amended claims 1, 13 and 25 as follows:

1. (Currently Amended) A voltage-controlled tunable multilayer filter comprising:  
a first resonator on a first layer of ~~dielectric material or~~ low-temperature-co fired-ceramic (LTCC);  
a second resonator coupled to said first resonator on a second layer of ~~dielectric material or~~ low-temperature-co fired-ceramic (LTCC);  
a third resonator coupled to said second resonator and cross coupled to said first resonator;  
an input transmission line connected to said first resonator;  
an output transmission line connected with said third resonator; and  
a voltage tunable variable capacitor in at least one of said resonators.

13. (Currently Amended) A method of using voltage to tune a multilayer filter, comprising the steps of:

providing a first resonator on a first layer of ~~dielectric material or~~ low-temperature-co fired-ceramic (LTCC);

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providing a second resonator coupled to said first resonator on a second layer of dielectric material or low-temperature-co fired-ceramic;

providing a third resonator coupled to said second resonator and cross coupled to said first resonator;

inputting a transmission line connected to said first resonator;

outputting a transmission line connected with said third resonator; and

varying the capacitance in at least one of said resonators by using a voltage tunable capacitor.

25. (Currently Amended) A voltage-controlled tunable multilayer filter comprising:

a first resonator on a first layer of dielectric material or low-temperature-co fired-ceramic (LTCC);

a second resonator coupled to said first resonator on a second layer of dielectric material or low-temperature-co fired-ceramic;

a third resonator coupled to said second resonator and cross coupled to said first resonator;

an input transmission line connected to said first resonator;

an output transmission line connected with said third resonator; and

a MEMS based varactor in at least one of said resonators.

Applicant has amended these independent claims to delete the alternative “a first layer of dielectric material” thereby limiting the claims to “low-temperature-co fired-ceramic (LTCC)”. Applicant submits that none of the cited art discloses or suggests using low-temperature co-fired ceramic with its concomitant performance, ease of manufacture and reliability benefits. Further, Applicant submits that it would not be obvious to replace a dielectric material with a low temperature co-fired ceramic as the Applicant has through extensive trial and error realized the surprising benefits of utilizing LTCC with voltage controlled tunable dielectric material to obtain

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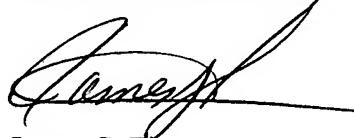
the excellent filter performance, ease of manufacture and reliability. Applicant thus respectfully submits that independent claims 1, 13 and 25 and claims that depend therefrom are in condition for allowance.

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### CONCLUSION

Applicant thanks the Examiner for his time in examining the present application and respectfully submits that, in view of the foregoing amendments and remarks, the application is in clear condition for allowance. The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. 1.16 or 1.17 to Deposit Account No. 502697. The Examiner is invited to contact the undersigned at 202-607-4607 to discuss any matter regarding this application.

Respectfully submitted,



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